

## **EVIDENCE FOR A LYME-LIKE ILLNESS IN AUSTRALIA**

### **Extract from Australian Chronic Infectious and Inflammatory Diseases Society (ACIIDS) Submission 370 to 2016 Senate Inquiry**

There is strong evidence that a Lyme-like illness can be acquired in Australia. The preponderance of evidence suggests that *Borrelia* is the primary causative organism responsible for this illness.

Borreliosis is a term that will be used at times in this submission; this term refers to infection with *Borrelia* bacteria, and is another name for Lyme disease.

The evidence for a Lyme-like illness in Australia is as follows:

1. Many people are becoming unwell, sometimes very unwell, after a tick bite in Australia.
2. The clinical features of this illness are similar to the clinical features of borreliosis (Lyme disease).
3. Many of these patients have positive blood tests for tick-borne infections such as *Borrelia*, *Rickettsia*, babesiosis, bartonellosis, ehrlichiosis and anaplasmosis.
4. Most of these patients respond to treatment with the same antibiotics that are used to treat borreliosis. This suggests that the illness is a bacterial infection. The antibiotic treatment often needs to be continued for an extended period.
5. The members of Australian Chronic Infectious Inflammatory Disease Society (ACIIDS) are currently treating approximately 1500 patients with this illness and have treated in total approximately 4000 patients.  
  
Most of these patients have positive blood tests for *Borrelia* at Australian and/or overseas laboratories. The overseas laboratories are fully accredited in their respective countries.
6. The members of ACIIDS have treated approximately 300 patients with positive blood tests for *Borrelia* who have never left Australia.
7. The first cases of Lyme disease being acquired in Australia were reported in the Medical Journal of Australia in 1982 (ref.1) and 1986 (ref. 2).
8. A study that found the bacteria that cause Lyme disease in Australian ticks was reported in the Medical Journal of Australia in 1991 (ref.4).
8. Russell and Docket in 1994 studied Australian ticks; although they did not find *B. burgdorferi*, the bacterium that causes Lyme disease in the USA, they found "spirochetal objects" which may have been fragments of a different species of *Borrelia* (31).

9. Hudson in 1998 reported in the Medical Journal of Australia a case in which he had cultured (found definite evidence of) *Borrelia* in the skin biopsy of a patient. The patient had travelled to Europe, but the clinical details indicated that the infection may have been acquired in Australia (3).

10. *Borrelia burgdorferi*, the bacterium that causes Lyme disease, was found in skin biopsies of two patients bitten by ticks in Australia in 2014 (attachment 4).

11. Irwin in 2015 identified a species of *Borrelia* in Australian ticks (attachment 32)

12. Irwin in 2015 identified *Anaplasma* and *Ehrlichia* in Australian ticks; these bacteria are common co-infections seen in Lyme disease patients in the USA (attachment 33).

13. Mayne in 2014 described a series of 500 confirmed cases of borreliosis, 89 of whom had never left Australia (attachment 1).

14. There have been numerous cases in Australia of patients who have developed an erythema migrans (EM or “bull’s-eye”) rash, as seen in Lyme disease in the United States, after a tick bite, and then developed LLI – examples of the rash are attachments 50,53,54,55.

While the preponderance of the evidence suggests that *Borrelia* is the primary causative organism, it is possible that the species of *Borrelia* primarily responsible for the illness in Australia has not yet been identified.

**Some people have claimed, on the basis of three studies examining ticks (the study by Russell and Dockett and the two studies by Irwin) that borreliosis cannot be acquired in Australia. It is unreasonable to make such a claim on the basis of three studies.**